In the Claims

Please amend the claims as follows:

1. (Currently Amended) Method for the fragmentation (F) of images (14i) into homogeneous regions (Ri), this fragmentation (F) using iterative merges of fragments Fi and Fj, among at least 3 fragments in the image, which are as similar as possible according to at least one selection parameter, this similarity being evaluated by a product A*B of two factors A and B, A being consistent with a number of pixels relating to the fragments Fi and Fj and B being consistent with the selection parameter(s), characterized in that a merge is performed when the product A*B*C is less than a threshold consistent with the selection parameter, C being ~~a factor consistent with~~ the inverse of a mean number of pixels per fragment, in the image.

2. (Original) Method according to Claim 1, characterized in that C is proportional to 2/ N_m where N_m represents a mean size of the fragments F_i, such as a mean number of pixels.

3. (Original) Method according to Claim 1, characterized in that the selection parameter(s) is (are) at least one of the following parameters: the luminance, the chrominance and the texture.

4. (Original) Method according to Claim 1, characterized in that each iterative merge relates only to two neighboring fragments F_i and F_j.

5. (Original) Method according to Claim 4, characterized in that factor A is proportional to $(N_i*N_j)/(N_i+N_j)$, where N_i and N_j are representative of the size of each merged neighboring fragment F_i and F_j.

6. (Original) Method according to Claim 5, characterized in that the size of a fragment is the number of pixels included in this fragment.

7. (Previously Presented) Method according to Claim 1, characterized in that factor B is proportional to $[(Y_i-Y_j)^2+(U_i-U_j)^2+(V_i-V_j)^2]$, where (Y_i-Y_j), $(U_i-\underline{U_j})$ and $(V_i - V_j)$ represent, respectively, the difference between the luminances and the blue and red colour signals of each of these two fragments.

8. (Original) Method of grouping fragments of an image which are obtained by a method according to Claim 1, characterized in that this grouping uses a model (24_i) of motion individual to each fragment F_i, this model (24_i) of motion being determined with a known error or variance (Var_{24i}) so as to allocate to the fragment created by this grouping one and the same model (24k) of motion, grouping together at each step of this method the fragments F_i and F_j which minimize a grouping cost C_{re} proportional to an evaluation $(\Delta_{i/j})$ of the difference between the models $(24_i, 24_j)$ of motion of the two fragments F_i and F_j.

9. (Currently Amended) Method according to Claim 8, characterized in that the grouping cost (C_{re}) is inversely proportional to a <u>grouping threshold</u> S_{re} of motion such that, in the absence of any other stoppage test, the grouping is not allowed if the evaluation $\Delta_{i/j}$ is greater that this threshold S_{re}.

10. (Original) Method according to Claim 9, characterized in that the grouping cost C_{re} is calculated according to the formula: $C_{re}= [(N_i \times N_j)/(N_i + N_j)][(\Delta_{i/j})/S_{re}]$, where N_i is the number of pixels of the fragment F_i and N_j is the number of pixels of the fragment F_j.

11. (Currently Amended) Method according to Claim 8, characterized in that the fragmentation F_j being of a greater size than the size of fragment F_i, the evaluation $\Delta i/j$ of the difference in motion between these fragments F_i and F_j comprises the following steps:

-calculation of a motion vector $(15_{pj/i})$ for each pixel P(x,y) of the fragment F_j according to the model 24_i with parameters $(a_i, b_i, c_i, d_i, e_i, f_i)$ of motion of the fragment F_i, in such a way that, for a pixel P with coordinates (x_j, y_j) of F_j, we calculate a vector

15pj/i with coordinates ($d_{xj/i}$, $d_{yj/i}$) according to the following formulae:

$d_{xj/i} = a_i + b_i x_j + c_i y_j$

$d_{yj/i} = d_i + e_i x_j + f_i y_j$

- evaluation of the motion vector $15_{pj/j}$ of this pixel P according to the model 24_j with parameters (a_i, b_i, c_i ,d_i, e_i, f_i) of this fragment F_j, that is to say

$d_{xj/j} = a_j + b_j x_j + c_j y_j$ and

$d_{yj/j} = d_j + e_j x_j + f_j y_j$

-evaluation of the difference $\Delta p_{j/i}$ between these two vectors $15_{pj/i}$ and $15_{pj/j}$ by calculating

$\Delta p_{j/i} = (d_{xj/j} \cancel{-d_{xj/j}} - d_{xj/i})^2 + (d_{yj/j} - d_{yj/i}\ )^2$

-evaluation $\Delta_{j/i}$ of the difference in motion between fragments F_i and F_j by summing the $\Delta p_{j/i}$ values of all the pixels of the fragment F_j and then dividing by the number of pixels N_j of the fragment F_j.

12. (Original) Method according to Claim 11, characterized in that the size of a fragment is defined as the number of pixels included in this fragment.

13. (Original) Method according to Claim 9, characterized in that the grouping threshold S_{re} is proportional to an error or variance Var_{24i} of the modeling (24_i) of motion of the fragment F_i.

14. (Previously Presented) Method according to Claim 9, characterized in that the grouping threshold Sre is proportional to the maximum Max (Var_{24i}, Var_m) between the variance (Var_{24j}) of the model (24_j) of motion of the fragment F_i and the mean (Var_m) of the variances of the models of motion of fragments of the image, and equal to 0.5* Max (Var_{24i}, Var_m).

15. (Currently Amended) Method according to Claim 13, characterized in that the grouping threshold S_{re} is higher, the grouping thus being less selective, when fragments whose pixels were included in one and the same region of a previous image are grouped together.

16. (Original) Method according to Claim 11, characterized in that a luminance prediction test is used before applying a less selective grouping threshold S_{re}.

17. (Currently Amended) Method according to Claim 16, characterized in that the fragment F_j being of a greater size than the size of the fragment F_i, the luminance prediction is performed by calculating, for each pixel P with coordinates (X_j, Y_j) of the fragment F_j, the vector $15p_{j/i}$ with coordinates $(dx_{j/i}, dy_{j/i})$, the luminance predicted at P (X_j, Y_j) in the current image being that found at $(X_j - dx_{j/i}, Y_j - dy_{j/i})$ in ~~the~~ a previous image.

18. (Currently Amended) Method according to Claim 8, characterized in that the grouping of fragments into regions of arbitrary size N_{min} is encouraged by using a grouping stoppage test using the grouping cost C_{re} multiplied by a coefficient such that, calling N'_i the maximum between the number N_i of pixels of the fragment F_i and N_{min}, and N'_j the maximum between the number N_j of pixels of the fragment F_j and N_{min}, ~~we use~~ the stoppage test~~:~~ is

$$\cancel{C_{re}\ (F_i \cup F_j) * \frac{N_i + N'_j}{N_i * N'_j} > 1}$$

$$\underline{C_{re}\ (F_i \cup F_j) * [(N'_i + N'_j) / (N'_i * N'_j)] > 1}$$

19. (Currently Amended) Method according to Claim~~,~~ 8, characterized in that ~~we use~~ the grouping stoppage criterion~~:~~ is

$C_{re}\ (F_i \cup F_j) > 1$.